LAKESIDE (TOWN OF)

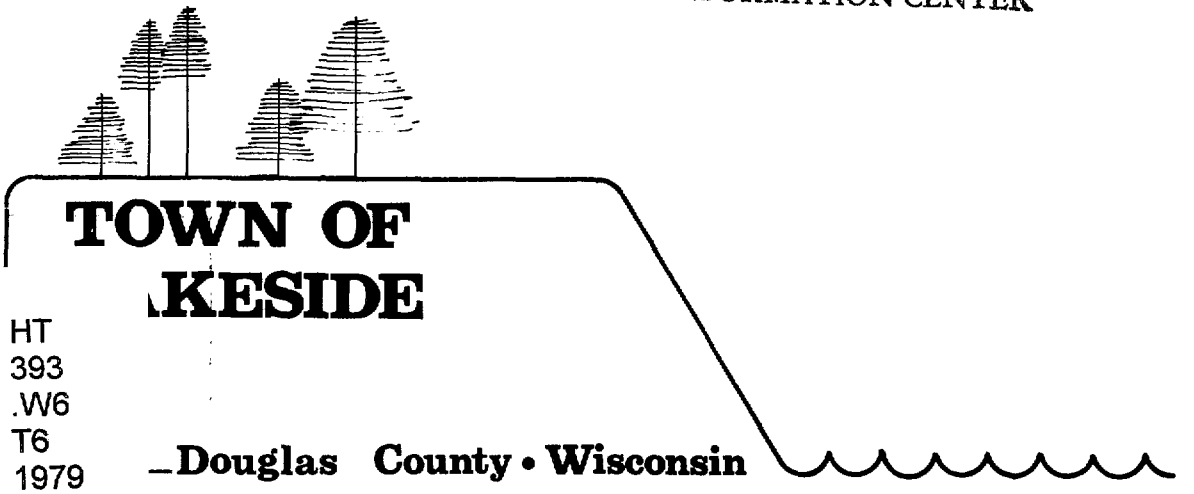
COASTAL MANAGEMENT PLAN

SEP 1979

Wis. Coastal Zone Management Program

TOWN OF LAKESIDE COASTAL MANAGEMENT PLAN

Douglas County, Wisconsin



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Publication of this plan was provided for by the Wisconsin Coastal Management Program.

Town of Lakeside

Coastal Management Plan

Prepared by

Northwest Regional Planning Commission

U.S. DEPARTMENT OF COMMERCE NOAA
COASTAL SERVICES CENTER
2234 SOUTH HOBSON AVENUE
CHARLESTON, SC 29405-2413

September, 1979

September 20, 1979

Mr. Eugene Davidson, Chairman
Town of Lakeside
Douglas County

The Northwest Regional Planning Commission is pleased to present this completed Town of Lakeside Coastal Management Plan. It has been a pleasure to assist you in your progressive planning efforts. The Town of Lakeside is to be commended for its forward-thinking toward the coastal resource of Lake Superior.

As the Wisconsin Coastal Management Program encourages governments to protect, preserve and intelligently develop coastal area resources, I'm sure that Lakeside's planning experience will provide a very instructive example of statewide significance. Be assured that our staff is ready to assist you in future planning efforts.

Yours very truly,

Mark Mueller

Mark J. Mueller
Executive Director

MJM:bjd

302 Walnut Street Spooner, Wisconsin 54801 • 715 635-2197

This management plan was adopted by the Town of Lakeside, Douglas County, Wisconsin on July 10, 1979.

Eugene Davidson
Town Chairman

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INTRODUCTION

A primary goal of the Coastal Management Program is to encourage units of government to control uses and activities that have a "direct and significant impact on coastal waters" and to preserve, protect, restore and, where possible, develop the resources of the coastal zone.

A trend in development is the haphazard, unorganized and wasteful expansion into rural areas. This development results in a financial burden that proves difficult to handle.

The Town of Lakeside is located just east of the Duluth-Superior metropolitan area, and is certain to receive further development pressures. An additional concern for the Town of Lakeside, is that the majority of soils in the town are highly erodible red clays. The soils are not suitable for soil absorption systems for waste disposal or construction on or near slopes. Further development of these areas will cause additional problems for town officials and property owners. The Planning Study Committee for this activity has recognized the sensitive nature of the shoreline and has made recommendations to address this concern.

The Town of Lakeside recognized a need for a plan identifying development policies of the township. At the same time, the Wisconsin Coastal Management Program expressed an interest in providing technical assistance to local communities for management of Great Lakes shoreline areas. The needs of the Town and the intentions of the Coastal Program have been met in one comprehensive program to assist the town.

The Town of Lakeside recognizes that the township will not be subjected to substantial growth in the near future. However, the town also recognizes that planning should take place now to prevent major problems from developing rather than later reacting to already occurring problems.

Future investments of the Town of Lakeside must be compatible with the environment of the coastal zone and Lake Superior. The preparation of this plan is the first step in assuring that compatibility.

The Town of Lakeside wishes to express its appreciation to the Wisconsin Coastal Management Program for providing the funding necessary for the development of goals and policies which, when implemented, will improve the quality of living in the township.

PART I

THE PHYSICAL SETTING

A. Brief History of Douglas County and the Town of Lakeside

The early history of Douglas County is a story of the Indian.

The first known inhabitants of what is now Douglas County were the Mound Builders. These were a rather mysterious, advanced group of people that appeared on the shores of Lake Superior sometime after the last glacier receded some 10,000 years ago. They mined copper in the Minong Range and at Manitou Falls on the Black River. They pounded this metal into weapons, implements, and ornaments later to be found buried in curious mounds with their dead. Their civilization was eventually overrun by barbarous tribes, mainly of Muskhogean and Iroquois linguistic stock, and disappeared as a distinct culture in late prehistoric American times. Only the mounds remain.

Next the Mascoutins, "People of the Fire", lived here by trapping beaver, harvesting wild rice, spearing whitefish, and hunting deer. They remained until about 1400 when the Dacotah (Sioux), who were forced westward by the Iroquois, drove them out. From this time on, there were successions of various Indian tribes from the northeastern United States invading and inhabiting this region, until finally in 1490 the Chippewas (formerly called Ojibwas) built a settlement on Bayfield County's

Regional Location

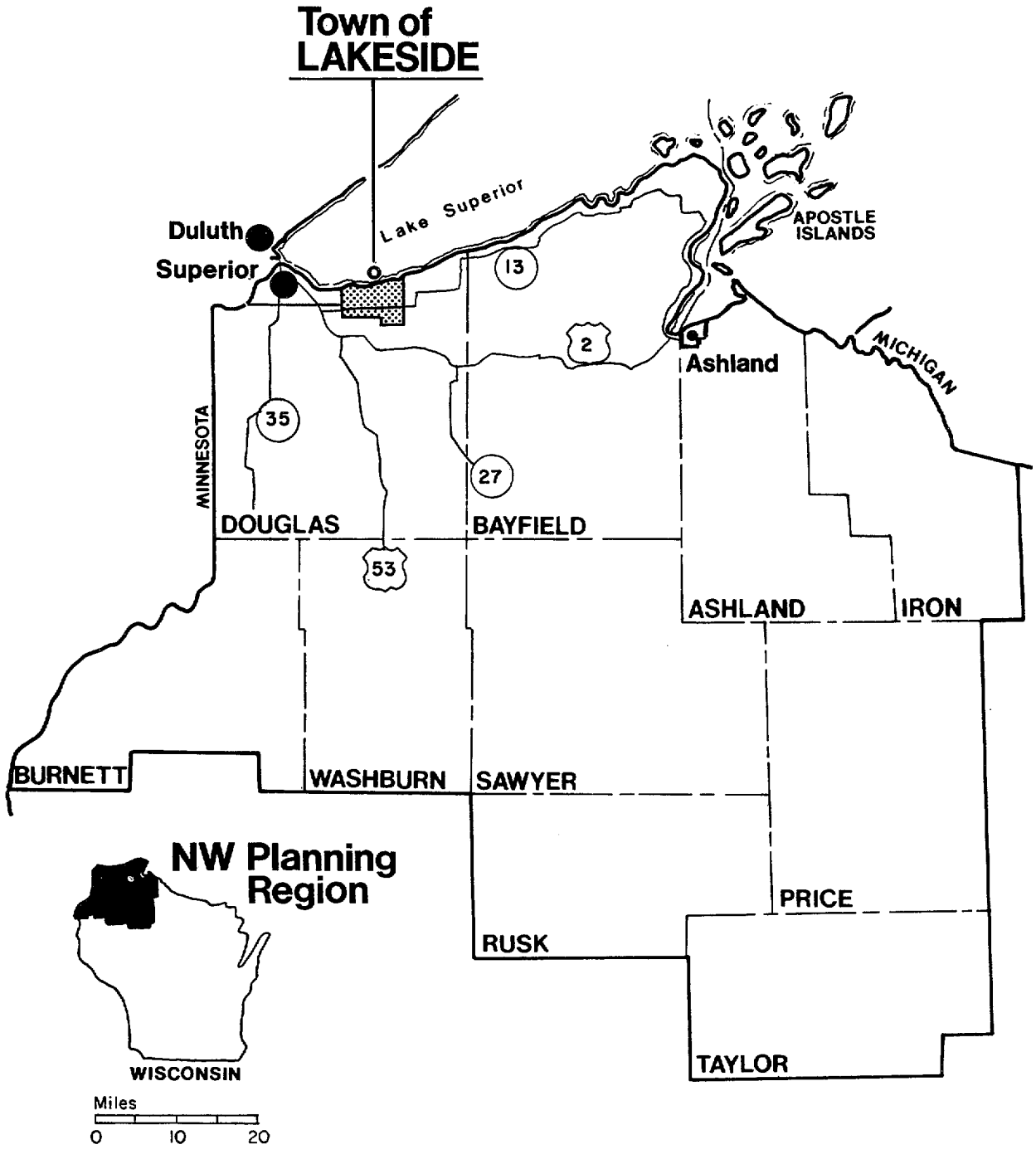


Plate 1

Madeline Island. They eventually moved onto the mainland where they had a thriving community for over 120 years, until they were eventually overrun by white colonists.

The first white men to visit the area were the French. In 1618, Stephen Brulé, a voyageur for Champlain, coasted along the south shore of Lake Superior where he met the Ojibwa. Upon returning to Quebec, he carried back some copper specimens and a glowing account of the region. In 1632, Champlain's map appeared, showing "Lac Superior de Tracy" as Lake Superior and the lower end shore as "Fond du Lac".

Soon after, fur trading companies established settlements, while missionaries came bringing the first touches of civilization. Names and dates of some of those who pioneered in exploring the Douglas County area were Father Menard (1653), Radisson and Grosseilliers (1655), Father Claude Allouez (1668), Nicolas Perrot (1671), Sier Randin (1673), Daniel Greysolon Du L'Hut (1679), and Pierre Charles Le Sueur (1693).

Douglas County lies on one of the major water highways used by early travelers and voyageurs of inland America. This water trail, the Bois Brule-St. Croix River Portage Trail, was the most convenient link between Lake Superior and the Mississippi River. The Bois Brule and St. Croix River systems are only separated by a short portage over a sub-Continental Divide near Solon Springs. The northward traveler used this water trail to take him to Lake Superior, while the downstream traveler could use it to go southwest to the Gulf of Mexico, unhindered by portages, by using the St. Croix and Mississippi Rivers.

The waterway was also an important route in the Wisconsin fur trade, particularly when the French War with the Fox Indians closed the more southern routes. This territory was transferred to British rule by the Treaty of Paris in 1763 at the conclusion of the French and Indian War. It was explored by Capt. Jonathon Carver in 1767 and came under the flag of the United States government in 1783 under terms of the Treaty of Peace of that year.

Indian control of what is now Douglas County began to wane in the early 1800's and in 1847 the Chippewas signed a treaty giving up all rights to the region. With the Indian now on reservations, white settlers began to pour into the region to cut timber and prospect for minerals. In 1852, the government survey of townships in the county was completed. That same year the first settlers founded the City of Superior. A law enacted February 8, 1854, separated Douglas County from the larger County of La Pointe.

Superior was immediately selected as the county seat, though it was not incorporated until 1887. St. Louis was actually the first name proposed for the County; however, R. R. Nelson submitted an amendment to change the proposed name to Douglas County after Nelson's friend, Stephen A. Douglas, the Little Giant of Democracy.

The opening of the Federal Land Office at Superior in 1855 marked the beginning of the white man's transformation of this area. Homestead, mining, and lumbering sites were rapidly taken up. Villages sprang up, with some taking the names of trees, others honored lumber, real estate men and politicians. The Village of Gordon was founded in 1862 on the site of Antoine Gordon's

old trading post on the Eau Claire River. Solon Springs (White Birch) grew near the site of Nicolas Perrot's vanished fort of 1673. Other towns perpetuate the Indian names given to localities, streams, and lakes.

Agriculture in Douglas County developed slowly. Whatever farming there was, developed in response to the needs of lumber camps. But the period between 1895 and 1920 witnessed a great transformation. In the north, with large areas of land still out of cultivation, a continuous, sometimes rapid, influx of agricultural immigrants took place. By a large proportion, these immigrants were Scandinavians, including Norwegians, Danes, Swedes, and Finns.

B. Geography

Douglas County is divided between two of the five geographical provinces of Wisconsin.

The Town of Lakeside lies within the Lake Superior lowland province which covers the northern part of the county, that area formerly occupied by Lake Superior. The boundary closely coincides with the topographic boundary provided by the escarpments at the juncture of the Lake Superior sandstone with the older igneous rocks. In topography it consists of a clay plain interrupted with morainic hills. The Northern Highland Province occupies that area south of the highest abandoned beach line of Lake Superior.

The sub-Continental Divide that separates the St. Lawrence (Lake Superior) and Mississippi River drainage systems passes through the middle of Douglas County. The major drainage streams

which lie north of the divide and empty into Lake Superior are, from east to west, the Bois Brule, Poplar, Middle, Amnicon, Nemadji, and St. Louis Rivers. Of these, the Poplar, Middle, and Amnicon River are found in the Town of Lakeside.

The landscape of Douglas County varies greatly from north and south. The Lake Superior lowland which adjoins Lake Superior consists of a clay plain about 10 to 20 miles wide and slopes gently from the Superior escarpment to the lake. Short, swift streams flowing north into Lake Superior have cut deep V-shaped valleys below the plain. During the glacial period the Lake Superior lowland was submerged under glacial Lake Superior and red clay was deposited on the old lake bed.

The Superior escarpment, or Douglas Copper Range, is probably the most noticeable geologic feature in Douglas County. It extends east-west across the county from the Bayfield County line to Foxboro, and in some places rises 350 to 400 feet above the lowlands. It is not a continuous bedrock range, but is divided into three main ridges by the streams which cross it. These streams have cut deep gorges and have many rapids and falls where they drop from the hard rock of the escarpment to the soft clays and sandstone of the lowland.

On the backslope south of the Superior escarpment, glacial features are especially noticeable. Here the land is mostly rolling upland interspersed with swamp wetlands. Elevations range from nearly 1,200 feet near the crest of the escarpment to 1,063 feet at Wascott. This compares with 629 feet for the City of Superior on the Lake Superior lowland.

C. Geology

Douglas County is underlain by ancient (Precambrian) sandstone and igneous bedrock. The northern part of the county is underlain with Superior red sandstone, over which is a thick mantle of clay and gravel, forming an artesian slope. Crystalline igneous rock underlies the southern two-thirds of the county, with gabbro and basalt outcroppings common along the Superior escarpment and Totagatic River of southeastern Douglas County.

Glacial deposits, reaching 200 feet over bedrock in some places, cover most of the county. Those deposits covering the Lake Superior lowland are generally shallow lake basin deposits; however, deposits in the old buried valley under the St. Louis River are known to have a thickness of nearly 600 feet.

D. Climate

Douglas County has a humid, continental type of climate--long, cold winters with rather short, moderately warm summers. However, this climate is modified somewhat by the tempering influence of Lake Superior, and by local variations in topography.

Lake Superior acts as a large storage basin for heat (or cold) and thus tends to increase the number of frost free days along the lake, but it also acts as a coolant in the summer. As a consequence, the extreme northern part of the county adjoining Lake Superior has longer growing seasons, cooler summers, and slightly more precipitation than is found in the southern part of the county. The 140- to 160-day growing season along the lake is as long as the growing season in the extreme southern counties of Wisconsin. Thirty-six years of weather records show the frost

free season at Superior averaged 153 days, with May 5 the average date for the last killing frost in the spring and October 5 the average date for the first killing frost in the fall. The longer growing season of the coastal area is counteracted by the red clay soils, which are too wet and cold to cultivate until long into the spring.

Precipitation over the year (32.1 inches) averages slightly more than the state average (31.0 inches). Of the total average annual precipitation received (32.1 inches), about 18.6 inches runs off into stream drainage systems. About 60 percent of the rainfall comes in spring and summer, with an average of 8 inches in March, April, and May and 11 inches in June, July, and August. June is the rainiest month and February is the driest.

Mean snowfall in inches varies from 50 near Solon Springs to around 40 along the lake. Snow blankets the ground about 60 days in southern Wisconsin, about 90 days in central Wisconsin, and about 120 days in northern Wisconsin. Douglas County averages about 115 to 120 days in which snow blankets the ground. The Duluth-Superior Harbor is usually icebound from December until April, but Lake Superior itself normally does not completely freeze over.

Unlike most Wisconsin counties, there is some difference in temperature from north to south within the county. The narrow strip which extends from Lake Superior southward to the Superior escarpment is modified by the lake so that the summers are cooler and the winters milder than on the upland south of the escarpment. The waters of Lake Superior are much cooler than the land in summer and relatively warmer than the land in late fall and winter.

Winds blowing over the water toward the land in summer keep the air cooler, whereas in fall and winter winds from the lake tend to raise the air temperatures. However, the influence of the lake does not extend far inland, and southerly winds in summer bring warm days to southern Douglas County. The average annual temperature of Douglas County is 41°F, with recorded extremes being 108°F and -47°F.

E. Soils

The soils of Lakeside, which greatly affect the chemical characteristics of surface waters, have been derived largely from the weathering of various glacial deposits. These deposits include lake deposits, glacial drift, and glacial stream deposits.

Glacial lacustrine, or red clay soils, are found in the old lake plains adjoining Lake Superior. They were laid down under the waters of a larger glacial lake which once occupied the Lake Superior basin. These calcareous red clay soils are finely textured, resulting in very poorly drained soils. These soils cover about one-fourth of the total county area and contain large quantities of groundwater. However, the overlying clay deposits effectively prevent this water from reaching the surface as springs and creates artesian conditions. The small quantity of water that does reach the surface is usually of high quality and rich in carbonates and nutrients.

Two other soils of Lakeside are the peat soils of the bogs, resulting from the accumulation of grass, sedge, leaves, and moss in poorly drained areas, and the muck soils resulting from

the accumulation of organic and mineral matter in marshes and other wetlands. Exposed bedrock appears at the surface in only a few places. A description of the soils found in the Town of Lakeside is found in Appendix I.

F. Erosion and Sedimentation

Steep gradients and high velocities of streams in the "red clay" region cause streams to have high capacities for sediment transport. Sediment discharge of area streams is flashy with most sediment transported during short periods. Natural headward erosion by streams in the "red clay" area produces large quantities of sediment by downcutting and gullying of the erodible lake sediments. Clearcutting of forests, agricultural clearing, poor road construction and intensive grazing by livestock on steep slopes and stream banks are factors that accelerate erosion and sediment yield. Most suspended sediment in streams is deposited in Lake Superior. The fine silt and clay particles remain suspended for a long time and spread out for several miles in the lake after heavy rains or spring runoff.

Wave action, high lake levels and many of man's activities have caused large volumes of sediment to enter Lake Superior. Highly erodible sandy clay bluffs in the area are continually undercut by progressive wave undercutting. This is a serious problem in the region particularly in the mid 1970's because it is a period of heavy water yield to the basin and higher regulated lake levels both of which erode beaches and expose more banks to wave action.

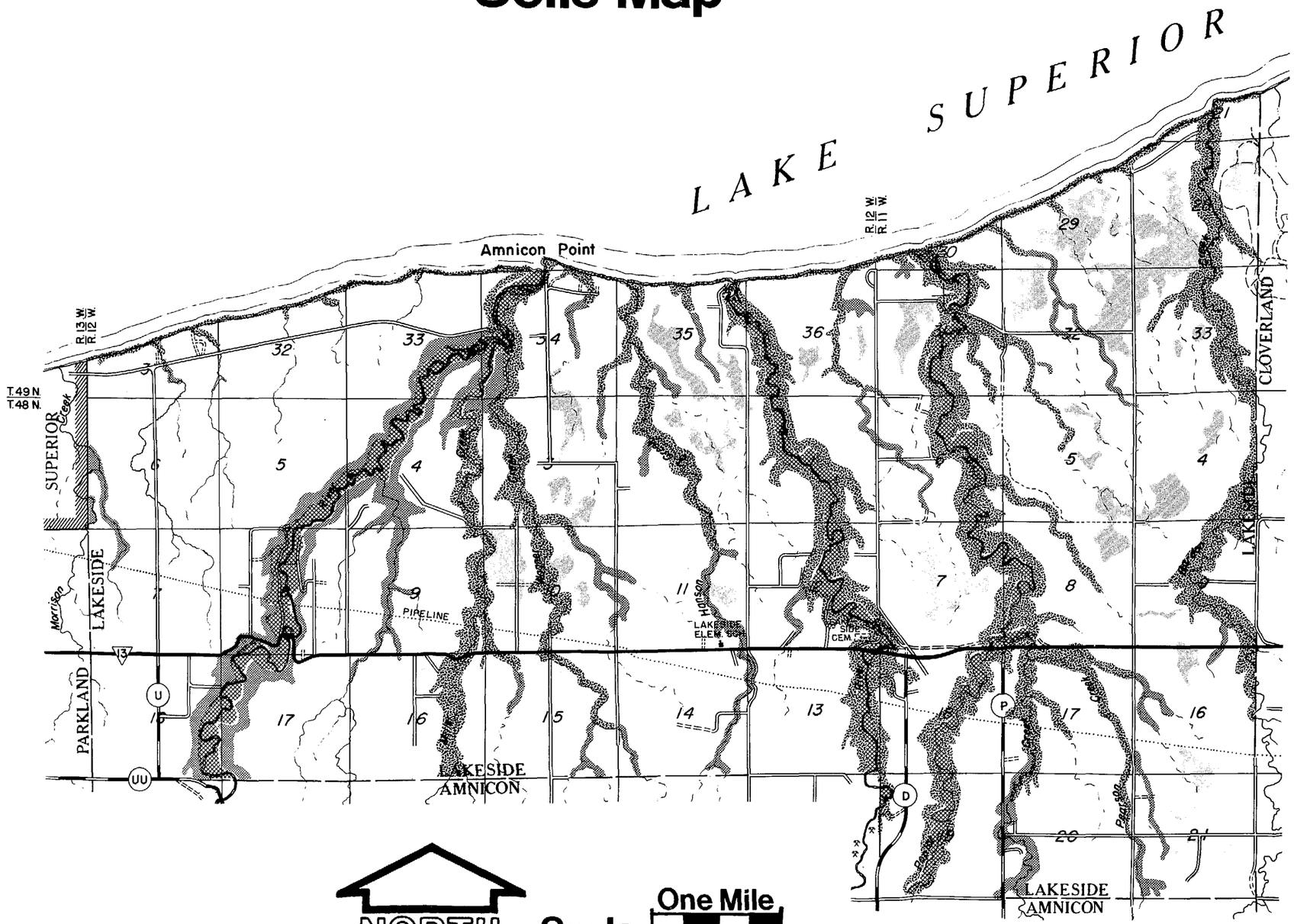
G. Flood Hazard Areas

In December of 1978, the U.S. Department of Housing and Urban Development published the flood hazard boundary maps for Douglas County. Those areas in the Town of Lakeside that have been identified as flood hazard areas zone A are those areas along Lake Superior and within the valleys of the following streams: the Amnicon River, Middle River, Poplar River, Bardon Creek, Wagner Creek and Miller Creek throughout their length in the Town. In addition, the first three-quarters of a mile upstream from Lake Superior of Hanson Creek is also classified as zone A.

The flood hazard boundary maps for this area are community panel numbers: 550538 0002A, 550538 0003A, 550538 0005A and 550538 0006A.

Not only are these areas subject to occasional flooding, but they also experience severe red clay erosion problems. For this reason it is suggested that man's intrusion into these areas be strictly limited.

Soils Map



LEGEND

ASSOCIATION 1

- 214B Dryburg sandy loam, 2-6% Slopes
- 214C " " " 6-12% "
- 254B Ontonogan clay loam, 2-6% "
- 254C " " " 6-12% "
- 262 Ontonogan-Rudyard silty clay loam, 0-3% Slopes
- 274B Ontonogan silty clay loam, 2-6% "
- 281B Hibbing silty clay loam, 2-6% "
- 281C " " " ", 6-12% "

ASSOCIATION 2

- 267 Pickford silty clay loam, 0-2% "
- 268 Bergland silty clay loam, 0-2% "
- 275 Rudyard silty clay loam, 0-3% "
- 347 Rudyard-Bergland silty clay loam 0-3% Slopes

ASSOCIATION 3

- 3 Moquah fine sandy loam, 0-3% Slopes
- 6 Udifluvents, 0-3% Slopes

ASSOCIATION 4

- 274D Ontonogan silty clay loam, 12-20% Slopes

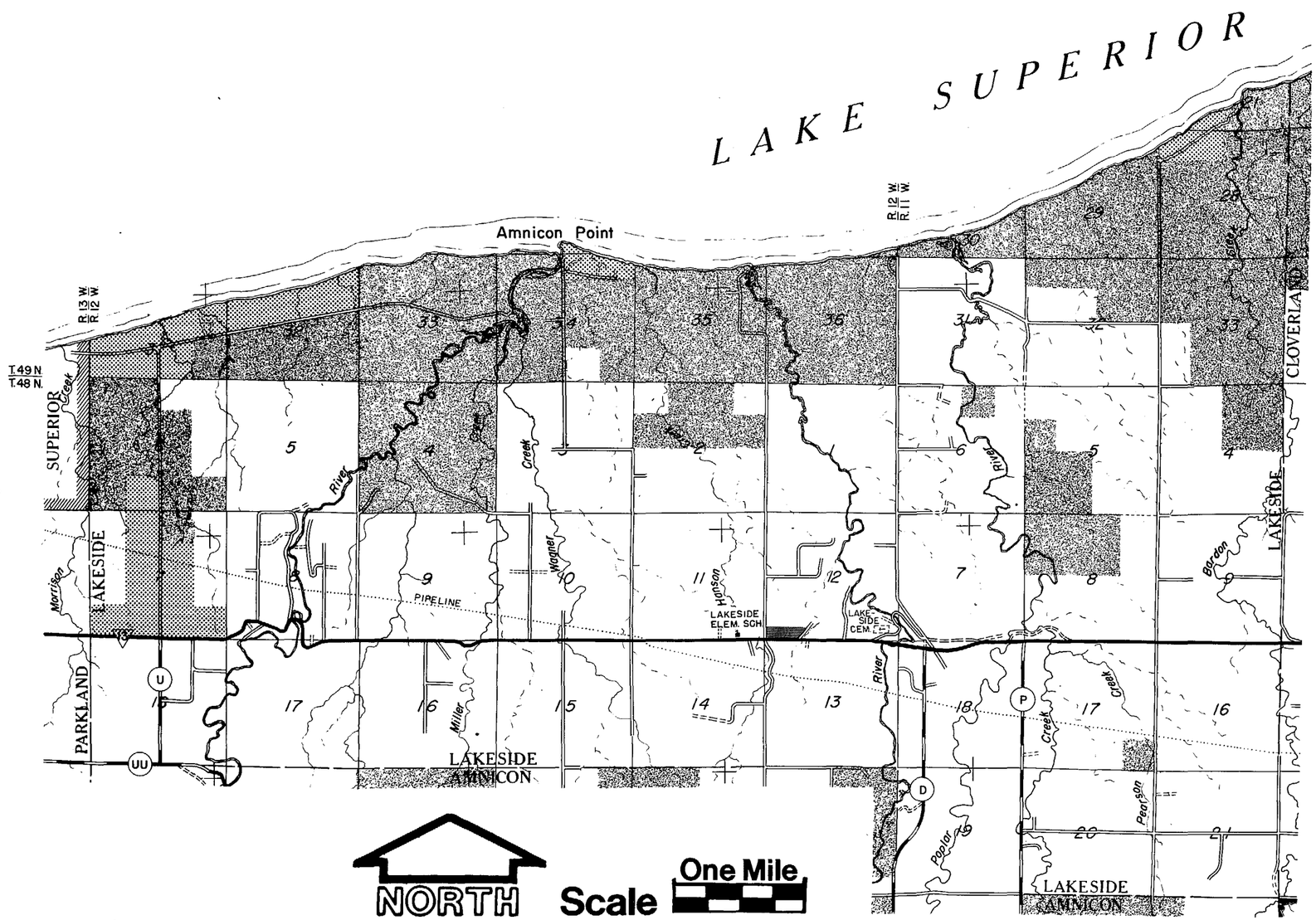
ASSOCIATION 5

- 274E Ontonogan silty clay loam, 20-30% Slopes
- 31D Udorthents, clayey, 20-60% Slopes (Lakebanks and steep valley slopes)

TOWN OF LAKESIDE
Douglas County • Wisconsin

TOWN OF LAKESIDE • COASTAL MANAGEMENT PLAN **Plate 2**

Current Zoning Map



NORTH

Scale One Mile

LEGEND

Zoning

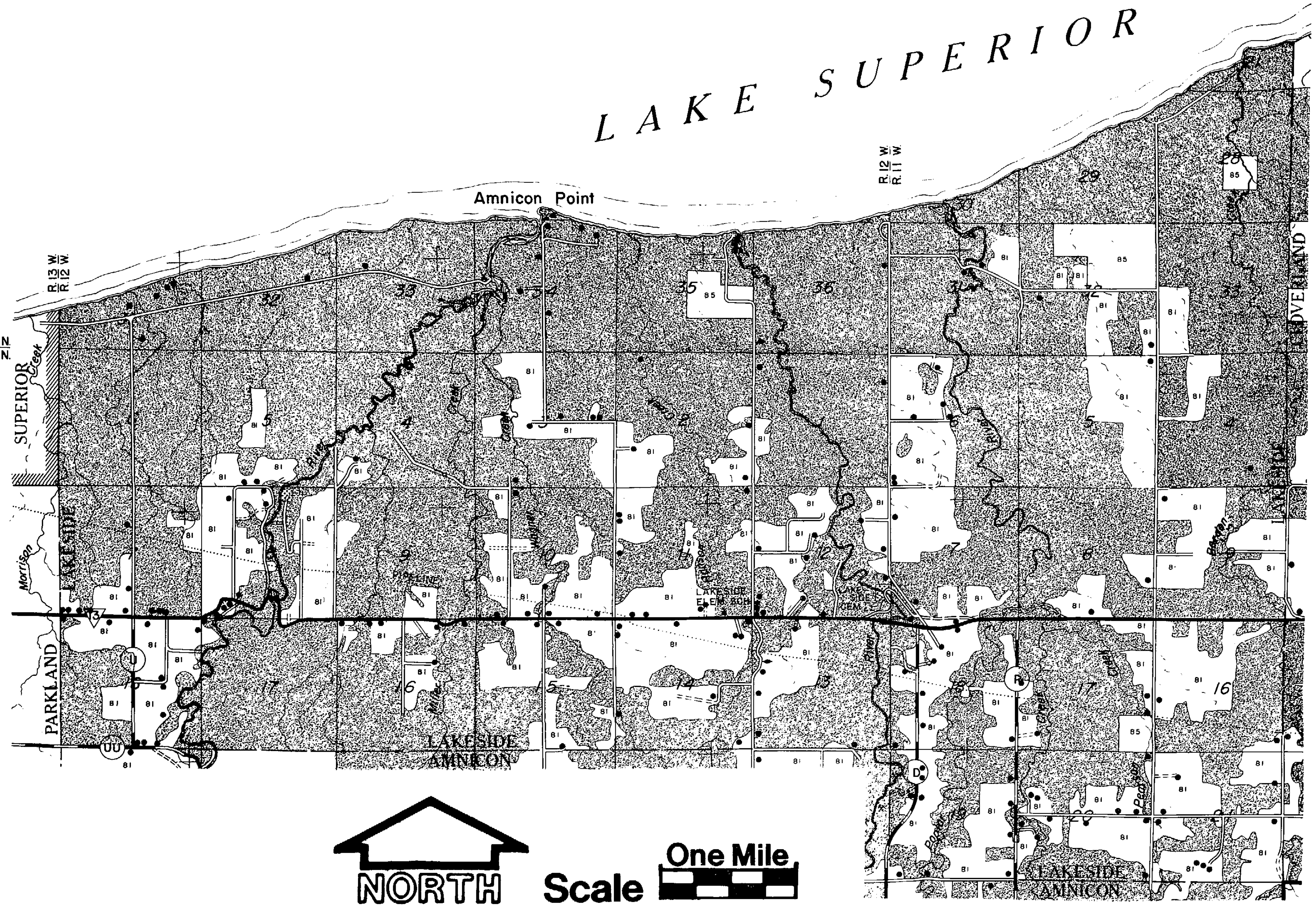
- RESIDENTIAL
- COMMERCIAL
- INDUSTRIAL
- TRANSPORTATION
- COMMUNICATIONS
- INSTITUTIONAL
- RECREATION
- AGRICULTURE
- NATURAL AREAS
- UNZONED

Financial assistance for this study has been provided through the Wisconsin Coastal Zone Managment Development Program by the Coastal Zone Management Act of 1972 administered by the federal Office of Coastal Zone Management, National Oceanic and Atmospheric Administration.

TOWN OF LAKESIDE
Douglas County • Wisconsin

TOWN OF LAKESIDE • COASTAL MANAGEMENT PLAN **Plate 3**

Current Land Use Map



LEGEND

LAND USE

1 - RESIDENTIAL ●
- 11 Single Family
- 12 Two Family
- 13 Multi- family
- 14 Mobile Home
- 15 Group Quarters

2 - COMMERCIAL ▲
- 21 Retail Sales
- 22 Retail Services

3 - INDUSTRIAL ■
- 31 Extractive
- 32 Manufacturing
- 33 Wholesaling
- 34 Storage

4 - TRANSPORTATION
- 41 Air - related Transportation
- 42 Motor Vehicle - related Transportation
- 43 Marine - related Transportation
- 44 Rail - related Transportation

5 - COMMUNICATION / UTILITIES ♦
- 51 Generation and Processing
- 52 Transmission
- 53 Waste Disposal and Recycling

6 - INSTITUTIONAL / GOVERNMENTAL
- 61 Educational
- 62 Health
- 63 Administrative
- 64 Safety
- 65 Assembly
- 66 Cemetery

7 - OUTDOOR RECREATION
- 71 Cultural / Natural
- 72 Camp / Picnic
- 73 Other Land Related
- 74 Water Related

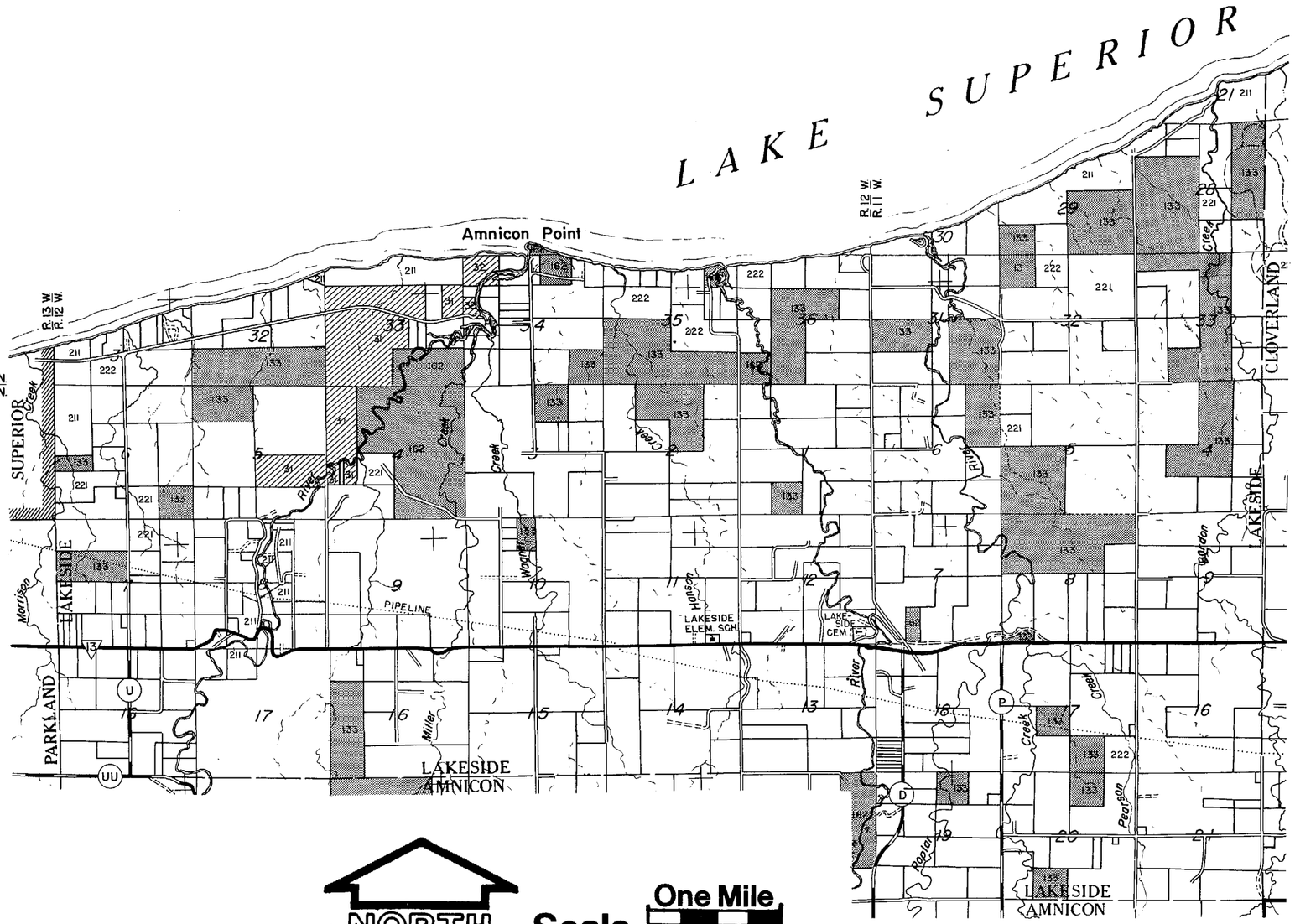
8 - AGRICULTURE / SILVICULTURE
- 81 Cropland / Pasture
- 82 Animal Husbandry
- 83 Farm Buildings
- 84 Long Term Specialyy Crops
- 85 Commercial Forest

9 - NATURAL AREAS
- 91 Conservancy
- 92 Vital Natural Function
- 93 Other Natural Areas
- 94 Water
- 95 Under Development

* All unlabeled areas are # 93, other natural areas.

Financial assistance for this study has been provided through the Wisconsin Coastal Zone Managment Development Program by the Coastal Zone Management Act of 1972 administered by the federal Office of Coastal Zone Management, National Oceanic and Atmospheric Administration.

Current Land Ownership



NORTH

Scale One Mile

TOWN OF LAKESIDE
Douglas County • Wisconsin

LEGEND

LAND OWNERSHIP

Public Ownership

11 - FEDERAL
- 111 National Forest
- 112 National Lakeshore
- 113 Fish & Wildlife Refuge
- 114 Military Reservation

12 - STATE
- 121 State Forest
- 122 State Park
- 123 State Fish & Wildlife Refuge
- 124 Scientific Areas
- 125 University of Wisconsin
- 126 Department of Transportation
- 127 Wisconsin Land Commission

13 - COUNTY
- 131 County Park
- 132 County Forest Crop Land
- 133 Other County Land (non FCL)

14 - CITY
- 141 City Park
- 142 Other City Land

15 - VILLAGE
- 151 Village Park
- 152 Other Village Land

16 - TOWN
- 161 Town Park
- 162 Other Town Land

17 - SCHOOL DISTRICT
- 171 School Forest
- 172 Other School District Land

18 - Other Public Land

Private Ownership

21 - INDIVIDUAL
- 211 Forest Crop Law & Woodland Crop Law
- 212 Other Individual *

22 - CORPORATE
- 221 Forest Crop Land
- 222 Other Corporate land
- 223 Utilities

23 - Other Private Land

Quasi-public Ownership

31 - ORGANIZATIONAL

32 - INSTITUTIONAL

33 - Other Quasi-public Land

Federally Administered Non Public Lands

41 - TRIBAL LANDS

42 - USA TITLE LANDS

43 - INDIVIDUAL RESTRICTED AND TRUST LANDS

* All unlabeled parcels are 212, Individual ownership.

The minimum parcel size is approximately 5 acres.

Financial assistance for this study has been provided through the Wisconsin Coastal Zone Management Development Program by the Coastal Zone Management Act of 1972 administered by the federal Office of Coastal Zone Management, National Oceanic and Atmospheric Administration.

PART II
BACKGROUND STUDIES
A. Population

Most major planning considerations faced by local units of government are dependent upon analyses and projections of local population. Population estimates which consider the size and density of the various groups living within the community determine, in large measure, the level of demand for future public and private facilities and services to be provided within the community.

1. Population Projections

Population projections for minor civil divisions, such as the Town of Lakeside, are difficult to make and the margin of error is great. Many types of population statistics are not even publicized for minor civil divisions because of the high level of possible error.

In April of 1979, the Northwest Regional Planning Commission prepared population projections for minor civil divisions through the year 2000 which are found in table 1. As may be seen in table 2, total population in the United States greatly increased between 1940 and 1970. This represents an overall increase of approximately 54% over the thirty year period. Population growth in the East North Central Region over the same period increased 51%. The State of Wisconsin had a population increase of 41% during that same period.

At the same time, the Northwest ten counties of Wisconsin as a region and Douglas County showed a net decline in population. However, the Town of Lakeside experienced modest growth during that period which typifies the urban to rural population shift prevalent in the 1970's. It is expected that this modest growth rate will continue into the next several decades.

Table 1

Population Projection for
Town of Lakeside 1970-2000

1970	1980	1990	2000
514	637	739	858
density (Persons/Acre)			
.02	.02	.03	.03

Source: Northwest Regional Planning Commission Population Projections Andrews, 1979

TABLE 2

POPULATION AND POPULATION CHANGE FOR LAKESIDE AND COMPARISON AREAS, 1940-1970

Population: Number	1940	1950	1960	1970
United States[1] (000's)	131,669.3	150,697.4	179,323.2	203,415.1
ENC Region[2] (000's)	26,626.3	30,399.4	36,225.0	40,252.5
Wisconsin (000's)	3,137.6	3,434.6	3,951.8	4,413.3
Northwest Region	186,523	172,464	158,120	154,879
Douglas County	47,119	46,715	45,008	44,657
Lakeside	462	438	480	514

Population Change: Number	1940-1950	1950-1960	1960-1970
United States (000's)	19,028.1	28,625.8	24,091.9
ENC Region (000's)	3,773.0	5,825.7	4,027.5
Wisconsin (000's)	297.0	517.2	461.5
Northwest Region	-14,059	-14,344	-3,241
Douglas County	-404	-1,707	-351
Lakeside	-24	42	34

Population Change: Percent	1940-1950	1950-1960	1960-1970
United States	14.5	18.7	13.43
ENC Region	14.2	19.2	11.12
Wisconsin	9.5	15.1	11.68
Northwest Region	-7.5	-8.3	-2.05
Douglas County	-.85	-3.6	-.78
Lakeside	-5.2	+9.6	+7.1

Source: U.S. Census of Population, 1940-1970

[1]Population estimates for the United States do not include Alaska and Hawaii prior to 1960.

[2]The East North Central Region (ENC) includes the states of Illinois, Indiana, Michigan, Ohio and Wisconsin.

Age-Sex Composition 1970
Town of Lakeside

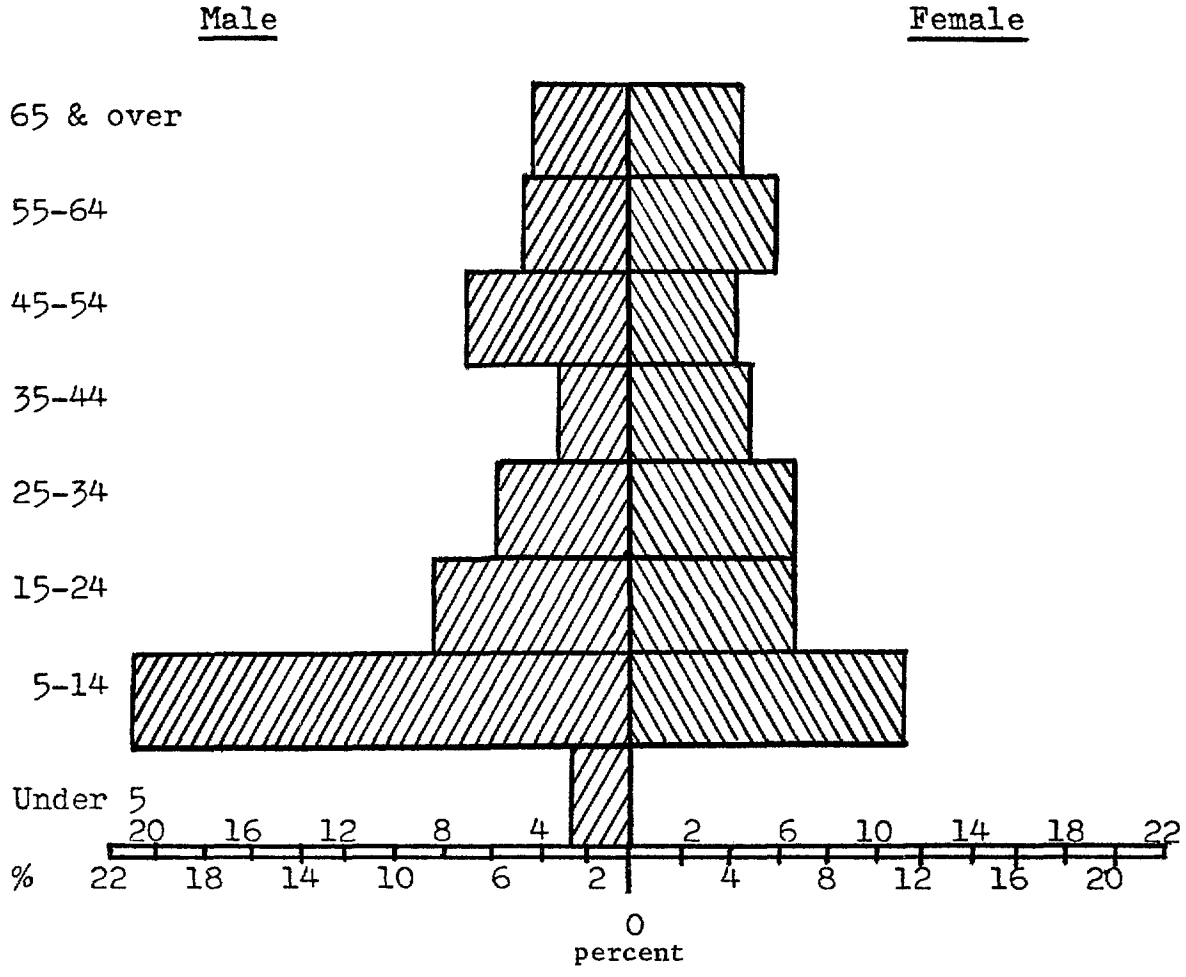


Fig. 1

In the 1970 census, Lakeside had a total of 190 housing units of which 127 were classified as rural non-farm and 49 were farm dwellings. From the census, a person per household figure of 2.7 was determined and that figure will be used for projection purposes.

Housing needs are based on population projections for the years 1980, 1990 and 2000.

1970	population	514	1990	population	739
	persons/ unit	2.7		persons/ unit	2.7
	units	190		units	274
				new starts	39
1980	population	637	2000	population	858
	persons/ unit	2.7		persons/ unit	2.7
	units	235		units	318
	new starts	45		new starts	44

From above, a total of 128 new housing units will be needed by the year 2000. If we assume a minimum of 5 acres per new unit, the land needs for such an expansion are approximately 640 acres or 2.5% of the existing land area of the Town.

2. Economic Characteristic of Lakeside Population

In this section of the plan, socio-economic data are presented and analyzed in order to determine the level of income,

education and employment available to Lakeside residents. It should be remembered that Lakeside is a rural town near an urbanized center and the data indicates that the town serves as a bedroom community to Superior-Duluth. In this case, the indicators of income, education and employment should not be depended upon too heavily to identify land use trends.

The data displayed in this section were obtained from the 1970 census of population.

3. Family Income

Normally, family income is a reliable indicator of a population's welfare and tends to indicate how well the local economy operates to provide wages and income necessary for self support. Table 3 shows the family incomes for the town and other selected areas of the state for comparison purposes.

Table 3

Family Income for Lakeside and Comparison Areas in the State of Wisconsin

Income Group	Lakeside	Douglas Co.	NW Wisconsin	State of Wisconsin
Under $3,000	11.9%	10.3%	15.9%	8.2%
$3,000 - 5,999	6.8	16.0	23.3	13.5
$6,000 - 8,999	31.3	23.1	25.1	19.9
$9,000 - 11,999	32.2	30.8	18.1	23.0
$12,000 - 14,999	11.9	11.0	8.9	15.6
$15,000 - 24,999	5.9	7.6	7.2	15.8
$25,000 - 49,999	0	1.1	1.3	3.4
$50,000 & above	0	0.1	0.2	0.6
Total	100	100	100	100

Median family incomes: Lakeside $8,999; Douglas County $9,065; Northwest Wisconsin $7,304 and State of Wisconsin $10,068

Source: U.S. Census of Population, 1970

While the income levels of Lakeside and Douglas County lay behind the State of Wisconsin as a whole, they are higher than the rest of the Northwest ten county region. This is a reflection of the City of Superior status as a population, indicating a service center and the fact that a high percentage of the working population of Lakeside are employed in Superior.

4. Educational Attainment

The level of education of a population is related to its capability as a labor force. The overall educational attainment level of the population is shown in table 4.

Table 4

Level of educational attainment of persons 25 years of age and above for the Town of Lakeside and selected comparison areas in Wisconsin.

Area	% Grade School Graduates (Thru 8th grade)	% High School Graduates	% College Graduates	Median Years of Education Completed
Town of Lakeside	92.6	55.4	5.0	11.2
Douglas County	90.5	54.0	8.3	11.3
NW Wisconsin	86.0	47.0	6.1	N/A
State of Wisconsin	88.6	52.6	6.0	12.1

Source: U.S. Census of Population 1970

These statistics indicate that the town population has an educational level on a par, and in several cases, better than the surrounding region and the State of Wisconsin.

5. Occupations of Lakeside's Population

Table 5 shows the occupations held by Lakeside residents in 1970. These data show what kinds of employment were available to Lakeside residents in and around the Superior-Duluth urbanized area.

Table 5

Occupation of employed persons in Lakeside and selected comparison areas, 1970

Occupation	Lakeside	Douglas County	NW Wisconsin	State of Wisconsin
Professional/ Technical	8.3%	12.6%	11.4%	13.7%
Farmers	3.0	0.7	7.2	4.4
Managers/ Proprietors	2.4	8.6	9.2	7.4
Clerical	10.1	15.6	11.6	15.6
Sales	10.1	5.0	4.5	6.5
Craftsmen	28	16.6	14.2	13.4
Operatives	20.2	16.2	17.6	19.7
Household & Other Services	14.9	17.7	15.7	13.3
Farm Labor	0.0	0.8	3.0	1.8
Other Labor	3.0	6.3	5.6	4.2

Source: US Census of Population, 1970

B. Land Use

1. Historic Land Use

Original land survey records (around 1840) show that Douglas County was mostly forest covered. The original forest

of what is now the western part of the county consisted largely of northern hardwood and pine types in the uplands, with swamp conifers in the depressions and wetlands areas. A mixture of jack, white and red pine was present in the outwash plain of southeastern Douglas County a century or more ago.

Today, better than 80 percent of Douglas County is still forested; however, aspen is now the most extensive single forest type, covering 43 percent of the commercial forest area. Nearly all the native commercially valuable timber was removed during the early logging days. This activity along with forest fires and replanting, is one of the three most important factors causing a change in Douglas County timber types. Farmland currently accounts for 11.6 percent of the total county area, but this activity is declining, with most of the farmland reverting to timber or wild recreation land, see Table 6. This is evidenced by the establishment of the largest county forest in the state (253,272.5 acres) and the Brule River State Forest (33,524.0 acres). Together the two forests contain 33.4 percent of the county's area.

Table 6
Town of Lakeside
Farm & Woodland Land Use Changes
1950-1978

	A.	% Land Area	No. of Farms
1950 farm (A)[1]	11,278	44	85
1978 farm (A)[2]	9,361	36	49
1950 woodland (A)*[1]	17,038	66	
1978 woodland (A)[2]	10,958	42	
Total Town Acreage	25,800		

*includes farm woodlots
Source: [1]1950 farm statistics [2]1978 statement of assessments

2. Current Land Use

The Town has adopted Douglas County's zoning ordinance. In a previous mapping effort by the Coastal Management Program, maps were prepared showing existing land use, zoning and land ownership. Table 7 gives a brief summary of the current uses and zones.

Table 7
Current Land Use

Zoned (A)[1]				
A-1	F1	R2	RR1	C1
18,805	6,023	818	95	75
Assessed (A)[2]				
9,361	10,958		869	0
Used (A)[3]				
8,160	341		240	75

Source: [1]Douglas County Zoning Map
[2]1978 Statement of Assessment
[3]CMP Use Map 1975

Douglas County Districts

(1) R-1: Residential District
(2) R-2: Residential District
(3) RR-1: Residential-Recreation District
(4) A-1: Agricultural District
(5) C-1: Commercial District
(6) I-1: Industrial District
(7) F-1: Forestry District
(8) W-1: Resource Conservation District
(9) SP-1: Shoreland Protection District (overlay)
(10) PUD: Planned Unit Development District

In view of the population and housing needs projection made previously in the section, it appears that the Town has sufficient area available for the projected land need for the year 2000.

3. Future Land Use

The Town's major land use concern is the use of Lake Superior shorelands for residential development. At this time, almost the entire Douglas County shoreline is in a state of accelerated erosion and gravity failure, and there are cases where buildings have been erected too close to the bluff edge and are in danger of falling down the eroding red clay slopes.

During the last twenty years, a number of agencies have studied the erosion problems along Lake Superior and in 1974 the U.S. Environmental Protection Agency funded the Red Clay Project for the purpose of abating erosion and sedimentation. During the course of that project, Dr. Joseph Mengel and Emil Meitzner were contracted to identify design and zoning guidelines for construction setbacks, highway slopes and other engineering works. The efforts recognized the functional relationship between slope angle, down slope erosion and transport mechanisms. The study provided a feasible base for the establishment of slope setbacks in zoning and land use planning and eliminated some of the subjectivity commonly found in planning and design of slopes and embankments.

Charles Hess, formerly of the Wisconsin Department of Natural Resources, studied shoreline erosion on the western arm of Lake Superior during 1973. Using air photographs and field checks, he identified an average of 280 feet of shoreland erosion during the period of 1852-1966. One hundred and thirty-three feet of it took place during 1938-1956. The average rate of retreat during this interval was 4.8 feet per year. This rate is within the 1 to 5 feet per year range of retreat postulated by the U.S. Corps of

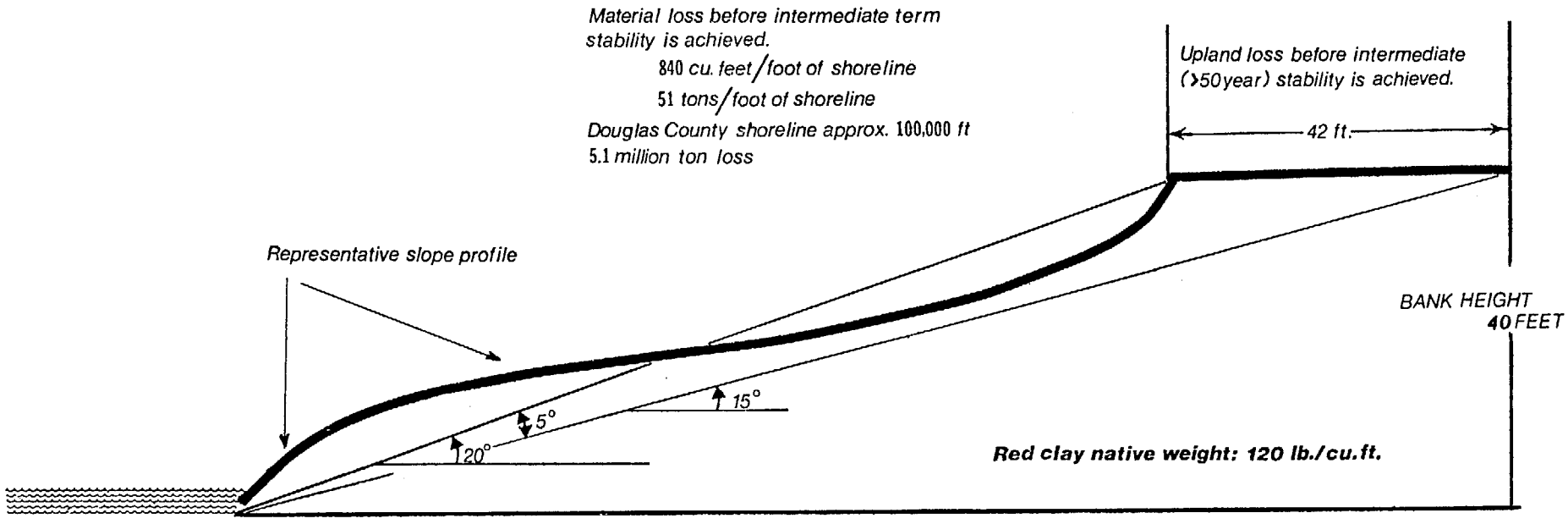
Engineers and one-half the 10 feet per year rate noted in this area by the Corps of Engineers in 1952. The rate of shoreline retreat is an inadequate measure of the total shore erosion impact because it fails to take into account additional slope adjustments necessary to achieve equilibrium. These do not become evident until much later than slope toe erosion.

There are two cases of slope toe erosion which may be observed. First, the static case (figure 2) in which we assume that the toe of the slope is relatively constant and that primary property loss will take place at the upland crest of the land slope. In the second case, dynamic, (figure 3) we assume that the toe of the slope is eroding at a rate equal to that of the overall retreat.

In the case of Douglas County, it is necessary to choose the dynamic case for identification of shore slope losses. The reason for this is because of the low percentage of sand size material in the "red clay slopes" which significantly slows beach and near shore deposition.

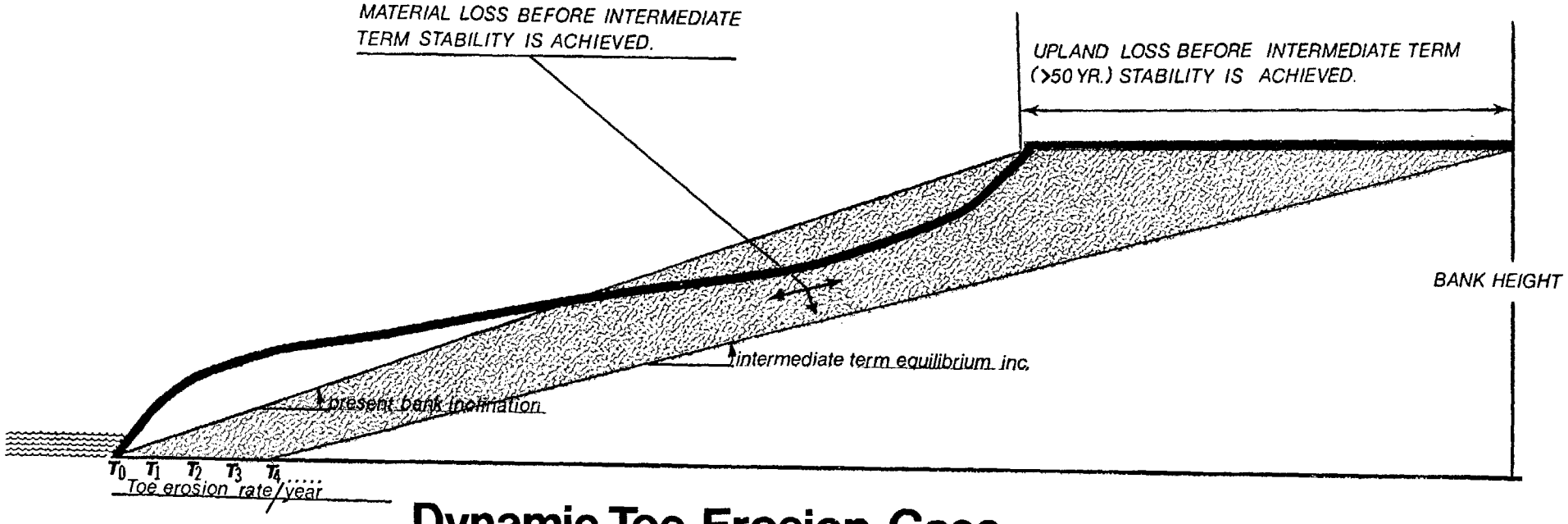
For the purposes of the shoreline setback ordinance, the Town has chosen a retreat rate of 3 feet per year which the Town considers to be in the middle range, and is certainly conservative in view of some of the catastrophic losses during the last several decades. The proposed shoreland ordinance is presented in the next paragraph along with the shoreland setback table.

REPRESENTATIVE SHORE SLOPE LOSSES ——— ***DOUGLAS COUNTY, WISC.***



Static Toe Erosion Case ——— **Fig. 2**

SHORE SLOPE LOSS CALCULATION PARAMETERS



Dynamic Toe Erosion Case **Fig. 3**

4.4 Shoreland Regulations

1. Inland Waters

1. Setback

For lots that abut on navigable waters the following setback regulations shall apply:

(a) All permanent structures, except piers and boathouses, shall be set back 75 feet from all points along the ordinary high-water elevation contour of navigable waters. Boathouses or similar structures which require waterfront location shall not be used for habitation nor extend toward the water beyond the ordinary high elevation.

(b) A setback equal to the average setback of existing principal building within 500 feet of a proposed building site shall be permitted where such existing buildings do not conform with the appropriate setback line. A minimum setback of 40 feet shall be required in all such cases.

(c) Private sewage disposal systems shall conform to the setback requirements of the Douglas County Sanitary Code and the applicable rules, regulations and laws as set forth in the Wisconsin Statutes and the Wisconsin Administrative Code.

(d) The County Zoning Administrator, or his representative, shall determine the ordinary high-water elevation.

2. Removal of Shoreline Cover

The cutting of trees and shrubbery shall be regulated to protect scenic beauty, control erosion and reduce the flow

of effluents and nutrients from the shoreland. In the strip 35 feet inland from the ordinary high waterline, no more than 30 feet in any 100 feet shall be clear cut. In other areas, trees and shrub cutting shall be governed by consideration of the effect on water quality and should be in accord with accepted management practices. Natural shrubbery shall be preserved as far as practicable.

3. Commercial Forestry

The commercial harvesting of trees is allowed. The maintenance and improvement of water quality shall be emphasized in all timber harvesting operation.

4. Filling, grading, lagooning and dredging of any watercourse may be permitted only in accord with local, state and federal law and where protection against erosion, sedimentation, and impairment of fish and aquatic life has been assured.

2. Lake Superior Coastal Waters

1. Setback

For lots that abut on navigable waters the following setback regulations shall apply:

(a) All permanent installations including soil absortion system, seepage pits and holding tanks; but not including piers and boathouses, shall be set back from all points along the bluff edge by the distance shown on the Lake Superior Shoreland Setback Table. Boathouses or similar structures which require waterfront location, shall not be used for habitation nor extend toward the

water beyond the ordinary high water elevation. The Zoning Administrator, or his representative, shall determine the setback for those cases not shown on the Setback Table, but in no case shall the setback be less than 75 feet from all points along the bluff edge.

(b) A setback equal to the average setback of existing principal buildings within 500 feet of a proposed building site shall be permitted where such existing buildings do not conform with the appropriate setback line. A minimum setback of 75 feet from all points along the bluff edge shall be required in all such cases.

(c) Private sewage disposal systems shall conform to subparagraph 4.4.2.1.a of this ordinance and the applicable rules, regulations and laws as set forth in the Wisconsin Statutes and the Wisconsin Administrative Code.

(d) The County Zoning Administrator, or his representative, shall determine the bluff edge.

2. Removal of Shoreline Cover

The cutting of trees and shrubbery shall be regulated to protect scenic beauty, control erosion and reduce the flow of effluents and nutrients from the shoreland. In the strip 35 feet inland from the bluff edge, no more than 30 feet in any 100 feet shall be clear cut. In other areas, trees and shrub cutting shall be governed by consideration of the effect on water quality and should be in accord with accepted management practices. Natural shrubbery shall be preserved as far as practicable.

3. Commercial Forestry

The commercial harvesting of trees is allowed consistent with 4.4.2.2. The maintenance and improvement of water quality shall be emphasized in all timber harvesting operations.

4. Filling, grading, lagooning and dredging of any watercourse may be permitted only in accord with local, state and federal law and where protection against erosion, sedimentation, and impairment of fish and aquatic life has been assured.

Shoreline Setback Table

SETBACK TABLE @ 3.0 FT/YR EROSION RATE

SLOPE HEIGHT (FT.)

SLOPE ANGLE ° (AVERAGE DEGREES)	5	10	15	20	25	30	35	40	45	50	55	60	65	70
16	170	183	184	186	187	189	191	192	193	194	195	196	197	199
18	172	187	190	195	198	201	205	209	212	215	218	221	224	227
20	174	191	195	201	206	212	217	223	227	232	236	241	245	252
22	175	193	198	206	212	219	226	232	238	244	250	255	260	270
24	175	195	201	211	218	226	234	242	248	256	263	270	275	285
26	175	197	205	215	223	232	241	250	258	266	274	282	290	300
28	175	199	207	218	227	237	246	256	265	274	283	291	300	311
30	175	200	209	221	231	241	251	262	271	281	290	300	309	321
32	175	202	211	224	234	245	256	267	277	288	298	308	318	331
34	176	203	212	226	237	249	260	272	282	294	304	315	325	339
36	176	203	213	228	240	252	264	276	287	299	310	321	332	346
38	176	204	214	230	242	255	268	280	291	304	316	327	339	353
40	176	204	214	232	244	257	271	284	295	308	320	332	344	359
42	176	205	215	232	246	259	274	287	299	312	325	338	349	364
44	176	205	216	234	250	261	277	290	302	316	329	342	354	369
46	176	206	217	236	252	263	279	293	305	320	333	347	359	374
48	177	206	218	238	253	265	281	295	308	323	336	351	363	379
50	177	207	219	240	254	267	283	297	311	326	339	355	367	383
52	177	208	220	240	255	269	285	299	314	329	342	359	371	387
54	177	209	221	241	256	271	287	301	316	332	345	363	375	391
56	177	210	222	242	257	272	289	303	318	335	348	366	379	394
58	177	211	223	243	258	274	291	305	320	337	351	368	381	397
60	177	212	224	244	259	275	292	308	323	339	354	369	384	399

Table 8

C. Transportation

Like most communities, Lakeside depends upon a variety of transportation modes to satisfy internal and external circulation. The Town, however, relies most heavily upon roads and highways to satisfy the needs of the population.

Fortunately the Town is close enough to the Superior-Duluth complex to have its needs fulfilled in the modes of air, rail, bus and truck service.

State Trunk Highway 13 is the prime connector between Lakeside and Superior. It is the most heavily travelled road in the Town.

At present, the local highway and road pattern is predominantly aligned north and south with STH 13 being common to most roads. The reason for this pattern is that the many streams flowing north to Lake Superior necessitate the construction of bridges for most east-west roads. The north-south roads lie primarily on the uplands between the deeply incised stream valleys.

1. Functional Classification of Highways and Roads

In order for traffic to be routed, handled and still provide adequate service to land uses, the system must function as intended. There are three types of roads which should be considered a basic functional system. They are:

Arterial Roads: These are continuous routes connecting various areas of the community and high traffic generation points. They provide for higher speeds, wider roadways and higher design standards than the following two types. Truck traffic and bus traffic can be expected to make up part of the traffic volume.

Collector Roads: These carry traffic from the local roads to the arterial routes and provide direct access to the area from arterial roads. Moderate amounts of low speed traffic, including some bus traffic can be carried.

Local Roads: These serve only as a means of access to abutting residential property. They are low speed, low traffic and short trip facilities.

In the Town STH 13 serves as an arterial route with CTH's D & U classified as collectors. They handle the bulk of the traffic movement within and through the area. The other roads serve as local access routes.

In 1977, the average annual 24 hour period traffic volumes were measured for STH 13 as follows:

STH 13 from US 2-53 to Amnicon River Road (average 1,610 vehicles)

STH 13 from Amnicon River Road to Cloverland (average 880 vehicles)

The numbers shown above are averages and the actual counts vary greatly between winter and summer. In general, the population and housing projections do not indicate a need for more roads, and since the town does not now experience serious traffic problems, they will concern themselves only with the maintenance and improvements on existing roadways.

Developments which require the construction of east-west roadways needing bridging should be strongly discouraged.

D. Town Facilities and Services

1. Administrative Facilities

Administrative facilities for the town are confined to the Lakeside school and the town garage near the junction of CTH D & STH 13. It is not anticipated that the town's needs will increase to the point of requiring more space.

2. Fire Department

The Town Fire Department is composed of approximately fifteen volunteer firefighters. The Town has two pieces of equipment. The first is a four year old pumper in very good condition and one tanker in good condition. At the present time, the Department appears to be adequate for the Town's needs.

3. Education

The Town of Lakeside is part of the School District of Maple which also serves Cloverland, Maple, Hawthorne, Poplar, Lake Nebagamon, Amnicon and other neighboring areas.

The Lakeside school houses grades 1 & 2 with 3, 4, & 5 at the Poplar School. Grades 6, 7, & 8 are at the new middle school in Poplar and the upper grades are at the Northwestern High School in Maple.

The Lakeside school site is approximately 4 acres, with a play area consisting of a ball-field, jungle-gym, merry-go-round, basketball court and winter ice skating.

4. Solid Waste

The Town operates a dump located north of Lakeside school on Middle River Road. There is adequate capacity at this site for several years. The Town will cooperate in the preparation

of a county-wide solid waste management plan to be completed in the near future.

E. Recreation, Open Space and Historical Resources

The Lakeside area has a large amount of open space and has the advantage of its proximity to Lake Superior. It also has a large number of rivers and creeks.

Approximately 9 miles of mainland shore lies in the town of which .45 miles or 5% is in public ownership.

Sport fishing including ice and open water fishing are available activities on the lake. Popular recreational activities pursued along the lake include fishing, swimming, sailing and pleasure boating, hunting, camping, hiking and scenic pursuits.

1. Supply

The Town has several areas that are currently used for recreational pursuits and several that, with some improvement would help satisfy the recreational needs of the town. Following is a description of those areas and their needs.

2. Land Based

Wisconsin Coastal History Trail

The Wisconsin coastal history trail in the Town of Lakeside consists of STH 13 from West to East through the town & CTH U from STH 13 south to Amnicon Falls State Park. Along the trail on STH 13 can be seen the predominant historical resource of the town, the Finnish windmill on the Davidson property. The windmill and site are on the National Register of Historic Places.

Lakeside School

Lakeside school is the only facility in the town to have a play area consisting of swings, jungle-gyms and merry-go-rounds. The school and facilities are jointly owned by the school district and the town. The facility is generally in good condition, however, the backstop for the ball-field could use some minor repair.

Town Garage and Ball-field

The town garage, located near the junction of STH 13 & CTH D has a ball diamond adjoining it. The facility is in good condition. The facility does not have adequate sanitary facilities at the present time. In the near future the Northwest Regional Planning Commission will prepare a site plan identifying the improvements needed.

Town Roads

The town has designated town roads as snowmobile trails. The trails however lack signs. These signs should be placed for user safety.

Public Lands and Industrial Forests

Over 13% or 3,600 acres of the town are in public ownership or industrial forest land. These lands provide a myriad of recreational opportunities for hunting, fishing, snowmobiling, cross-country skiing and scenic pursuits.

3. Water Based

Lake Superior

Popular recreational activities along the Lake Superior shore include fishing, hunting, camping, hiking and scenic pursuits. Swimming in Lake Superior is hampered by cold water. Water sport activities such as sailing and pleasure boating are on the increase.

Rivers

Of the rivers and streams draining the Town of Lakeside, the Amnicon is certainly the most important in terms of recreation potential. The other major waterways, Poplar, Middle River, Bardon and Hanson Creeks have small fish populations and do not attract heavy use except during the smelting season. The Amnicon, on the other hand, has warm water fishing which includes muskellunge. The mouths of most of the major drainages have road access and are used to some extent as boat launching sites. The only site considered suitable for this, at this time, is the mouth of the Amnicon. The town plans to request the preparation of a recreational site plan for property owned by them at the mouth of the river.

PART III

Development Goals and Policies

A. Residential Development

Goal: to make safe and sound homes available to residents.

Policies:

1. homes should be constructed in conformance with accepted building standards.
2. residents should be encouraged to maintain their homes.
3. homes should be constructed away from hazard-prone areas.
4. subdivision of lands in hazard-prone areas should be discouraged.
5. the Town supports strict enforcement of sanitary regulations.
6. the Town shall, in cooperation with Douglas County, plan for safe and effective solid waste disposal.
7. the Town shall, propose a zoning amendment to the Douglas County Board of Supervisors regarding more restrictive building setbacks along the Lake Superior shoreline.

B. Commercial Development

Goal: to locate commercial development so that it is economically feasible to operate a business; provide goods and services to the Town in a clear, attractive, safe and convenient manner; and provide suitable location for commercial activities which will best suit the public interest, serve the area and protect the general welfare of the community.

Policies:

1. future commercial development should generally be restricted to the STH 13 corridor.
2. future developments should provide adequate parking area to lessen the need for on-road parking.

C. Recreation and Open Space Development

Goal: to provide recreational opportunities for Town residents in an economical and practical fashion.

Policies:

1. to discourage recreational development in hazard-prone areas.
2. to upgrade recreational facilities near the town garage and community club.
3. to provide sanitary facilities where appropriate.
4. to adopt the Northwest Regional Planning Commission's recreation plan for Douglas County.

D. Industrial Development

Goal: to provide opportunities for appropriate industrial concerns to locate in the Township.

Policies:

1. consideration will be given to light industry or assembly-line production operations.
2. industrial developers must supply their own water, sewage disposal and roads.

E. Transportation Development

Goal: to provide a modern, efficient and effective transportation system to benefit the general welfare of the community.

Policies:

1. Town roadways should receive prompt maintenance as needed.
2. the Town will not assume responsibility for the provision of new road access to public or private properties.
3. generally the Town will not construct new roads in areas requiring bridges.

F. Agriculture and Forest Development

Goal: to preserve and protect the prime agriculture and forest lands and soils in the Town.

Policies:

1. discourage uses which would be incompatible with agriculture activities from locating in present agricultural areas.
2. discourage uses which would be incompatible with forestry activities from locating in present forestry areas.

3. encourage development and use of a higher quality timber resource.

4. encourage wise use of the soil and water resources.

PART IV

Geographic Area of Management Concern

The Wisconsin Coastal Management Program provides an oppportunity for local governmental units along Lake Michigan and Lake Superior to seek state assistance in management of shoreline areas and implementation of activities in the coastal environment. Prior to the provision of direct financial assistance for management or implementation by the Coastal Management Program, an area must be nominated as a Geographic Area of Management Concern (G.A.M.C.). In order to have a geographic area designated the chief elected official of a governmental unit must provide satisfactory answers to the following questions:

1. What is the description of the area requested to be designated?
2. What is the relationship of the described area to Lake Superior?
3. What management or implementation policies does the local governmental unit have in place for the affected area?
4. What authority or control does the governmental unit have over the property, or how can the governmental unit insure that policies proposed for the area can logically be carried out?

When a described property has been successfully designated as a G.A.M.C. it is then possible to seek financial assistance

directly from the Coastal Management Program, to carry out the management or implementation policy. The activity or activities recommended by the Town of Lakeside can be carried out in a number of ways, directly by the Town, or Douglas County, and/or in cooperation with a state or federal agency.

The Town of Lakeside may, for example, want to address the questions of recreational development of a particular area within an approved Geographic Area of Management Concern. It is possible to seek assistance in a number of different ways. The Town may secure funds to have a site layout prepared directly from the Coastal Management Program with a portion of the actual construction of the recreational area coming through a Department of Natural Resources recreation program. If the Town would like to address a serious erosion problem on Lake Superior it may be possible to seek assistance from the State Geological and Natural History Survey either directly or indirectly through the Coastal Management Program.

It is important to remember that management and implementation plans proposed by a governmental unit must be: consistent with the policy plan prepared for G.A.M.C. designation; consistent with the stated goals and objectives of the Wisconsin Coastal Management Program and, finally, realistic. For areas that are nominated as Geographic Areas of Management Concern the coastal staff will also provide assistance where possible to help in implementation of goals and policies.

There are other aspects that are important to consider in terms of the Wisconsin Coastal Management Program. Wisconsin's

Program is broad based and has sought involvement of the coastal citizen and participation of local governmental units in a state program. The state-local partnership is very strong in Coastal Management in Wisconsin. Partnership provides a greater likelihood of achieving overall program goals.

The area recommended for nomination as a Geographic Area of Management Concern in the Town of Lakeside is that area between the east and west Town boundaries and north of U.S. Highway 13 to Lake Superior. Other segments of this Plan support that area for designation, monitoring and management.

PART V

Implementation of the Plan

The implementation of this plan involves an ongoing commitment by the town and its elected officials. These commitments will be measured by a strong concern for the welfare of the town and a realization that certain procedures are to be followed to ensure a continued quality living environment. Some measures are:

1. submission of the proposed Lake Superior setback ordinance amendment to the county Zoning Committee and County Board.
2. the development of new regulatory ordinances based on the goals and objectives of this plan as needed.
3. consider the adoption of Village powers as an alternative to dependance upon the County for services.
4. the establishment of a review procedure for the updating of this plan.

APPENDIX I

Town of Lakeside Soil Description

Appendix I

Town of Lakeside Soil Description

Association 1

Hibbing silty clay loam, 2 to 6 percent slopes.

Hibbing silty clay loam, 6 to 12 percent slopes.

Ontonogan clay loam, 2 to 6 percent slopes.

Ontonogan clay loam, 6 to 12 percent slopes.

Ontonogan silty clay loam, 2 to 6 percent slopes.

Ontonogan silty clay loam, 6 to 12 percent slopes.

Ontonogan-Rudyard-silty clay loams, 0 to 3 percent slopes

Deep, level to sloping, well drained and moderately well drained, very slowly permeable soils formed in clayey lake-laid sediment. In some areas somewhat poorly drained clayey soils are closely intermingled with the better drained soil and occupy 20 to 35 percent of the soil area. Except in these wetter areas, the water table is from 2 to more than 6 feet deep. The somewhat poorly drained areas have a temporarily perched water table at the 1 to 2 foot depth. Included in the association are small areas with a sandy loam surface up to 30 inches thick.

These soils are suited to growing cultivated crops, hay and pasture, and to growing trees. Sloping areas used for cultivated crops are susceptible to erosion, and erosion control measures are needed. Drainage is needed for best crop production on somewhat poorly drained areas.

Slow percolation rates, high shrink-swell potential and low strength make these soils unsuitable for septic tank absorption fields, building site development and road construction. The soil material in this association is unsuitable as construction material.

Association 2

Bergland silty clay loam, 0 to 2 percent slopes.

Rudyard silt clay loam, 0 to 3 percent slopes.

Rudy-Bergland silty clay loams, 0 to 3 percent slopes.

Pickford silty clay loam, 0 to 2 percent slopes.

Deep, nearly level and gently sloping, poorly drained and somewhat poorly drained very slowly permeable soils formed in clayey lake-laid sediment. The water table is perched at a depth of 0 to 2 feet. Included are small areas of higher-lying, well drained clayey soils.

If adequately drained, these soils are suited to growing cultivated crops, hay pasture and trees. Undrained, the lower-lying wet areas are poorly suited to growing cultivated crops, hay, pasture and trees.

Wetness, slow percolation rates, high shrink-swell potential, low strength and the potential for flooding make these soils unsuitable for septic tank absorption fields, building site development and road construction. The soil material in this association is unsuitable as construction material.

Association 3

Moquah fine sandy loam, 0 to 3 percent slopes.

Udifluvents, 0 to 3 percent slopes.

Deep, nearly level and gently sloping, well drained and moderately well drained soils formed in alluvial sediments on

floodplains. These soils are variable in texture, ranging from loam to sand. Permeability ranges from moderately slow to rapid. The water table is at a depth ranging from 2 to more than 6 feet. These soils are subject to flooding of short duration. Included are small areas of higher-lying clayey soils, and poorly drained alluvial soils.

These soils are generally unsuited to growing cultivated crops because of frequent flooding. They are suited to growing hay, pasture and trees.

Occasional flooding and hazard of streambank erosion make these soils unsuitable for septic tank absorption fields, building site development and road construction. The soil material in this association is generally unsuitable as construction material because of excess proportion of fine material. However, gravel substrata that are suitable occur in places.

Association 4

Ontonogan silty clay loam, 12 to 20 percent slopes.

Deep, moderately steep, well drained, very slowly permeable soils formed in clayey, lake-laid sediments. This soil is on the side slopes of ravines. Included are small less sloping areas, soils with a sandy surface layer, and small steeper areas.

This soil is suited to growing hay, pasture or trees. Runoff is rapid. If used for growing cultivated crops this soil is susceptible to severe erosion, and erosion control measures are needed.

Steep slopes, slow percolation rate, high shrink-swell potential, low strength and the risk of soil slippage make this soil unsuitable for septic tank absorption fields, building site development and road construction. The soil material in this association is unsuitable as construction material.

Association 5

Ontonogan silty clay loam, 20 to 30 percent slopes.

Udorthents, clayey, 20 to 60 percent slopes.

Steep and very steep clayey soils on side slopes of ravines and on the lakebank. Included are small less sloping areas and soils with a sandy surface layer.

These soils are unsuited to growing cultivated crops, hay and pasture. They are suited to growing trees, but the steep slopes make harvest difficult.

Steep slopes and unstable soil make these areas unsuitable for septic tank absorption fields, building site development and road construction. Down slope movement of surface soil and massive slips are common. The soil material in this association is generally unsuitable as construction material.

TOWN OF LAKESIDE COASTAL MANAGEMENT PLAN

NORTHWEST REGIONAL PLANNING COMMISSION

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